



40G/100G Today and Tomorrow

Niall Robinson, VP Product Marketing

China Optical Communication Seminar On COEIC 2009

September 8, 2009

Convention & Exhibition Centre, Shenzhen, China

Three Key Take-Away's Today

- **Capacity growth** continues at a **fast pace**
- Industry needs to be **much more capital efficient** than in the past
- All solutions **must be cost effective**

What is Consuming Bandwidth in Today's Internet?

What's Consuming Bandwidth?



You

Many Bandwidth Users?

If all TV watched per day in USA
were in **High Definition**
it would require:

70 times more bandwidth than
all of today's US Internet

Bandwidth Demand Growth: Forecast to Continue at >

Global IP traffic
will nearly double
every two years
through 2012

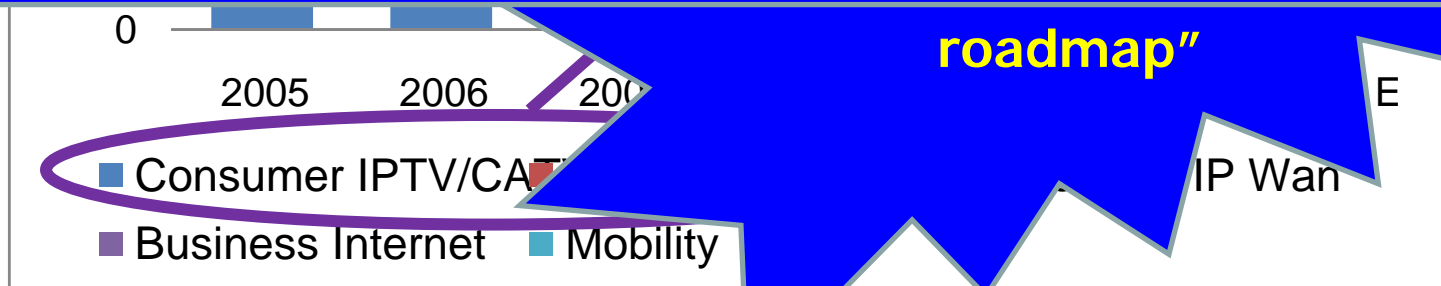
3000

Quote from OFC

"40 Gbps is one of the highest Optical Networking (ON) growth areas as consumer demand, driven by video, is stressing network capacities," said Ron Kline, research director of network infrastructure at Ovum. **"The 40 Gbps market will grow nearly 90% in 2009** as a new generation of integrated muxponders becomes available and 4x10 Gbps applications dominate deployments."

June 8th 2009

roadmap"



Source: Cisco & Network Elements & Co.

Road to Today's 40G DWDM

MSA Modules

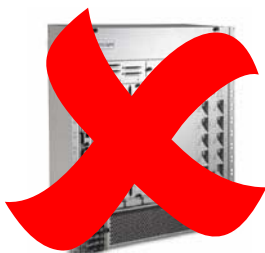


Too much money spent to get to today's solution

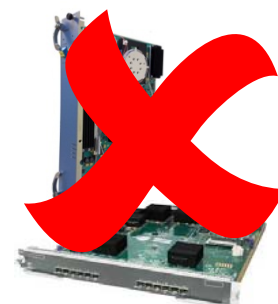
Industry cannot afford to be cash inefficient

Wrong turns left 'bad taste' with many investors, suppliers and customers

Proprietary Shelves



Custom Linecards



40G Systems Companies



Road to 100G

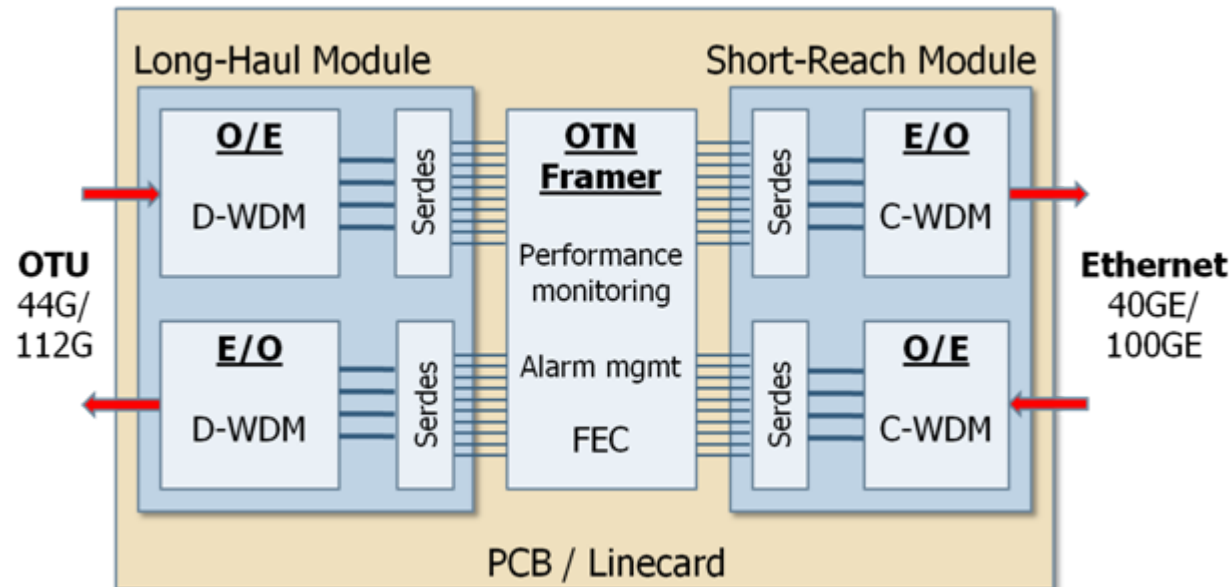
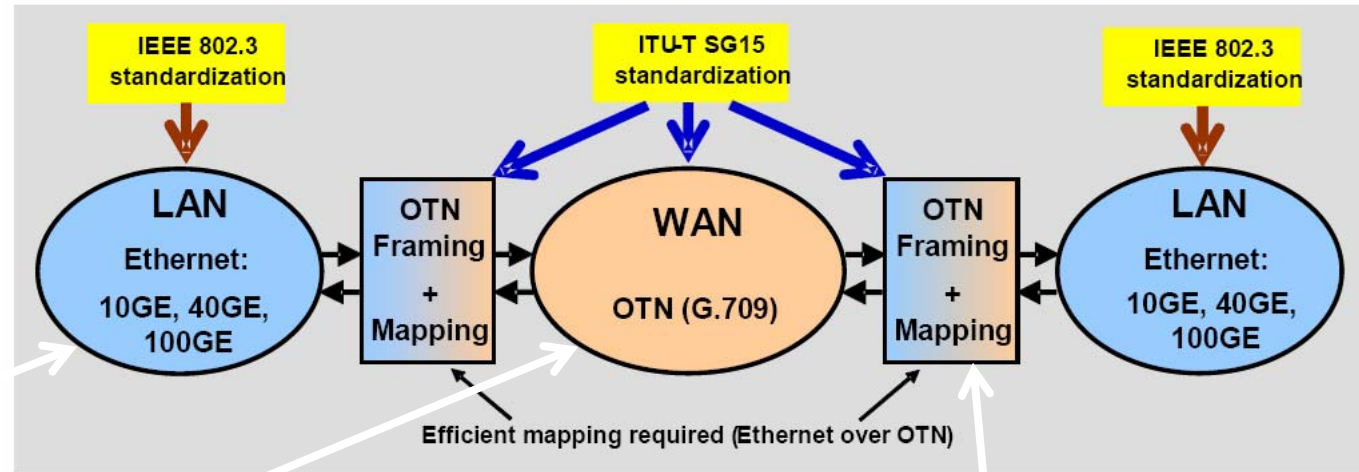
■ MSA module solutions on the horizon 😊

- Industry moving towards MSA solutions as companies realize that the cost of independently developed systems is too high for acceptable ROI
- Client side MSA (CFP) module group formed
- Line side DWDM MSA module group formed

40G/100G needed in both WAN and LAN, but requirements are different

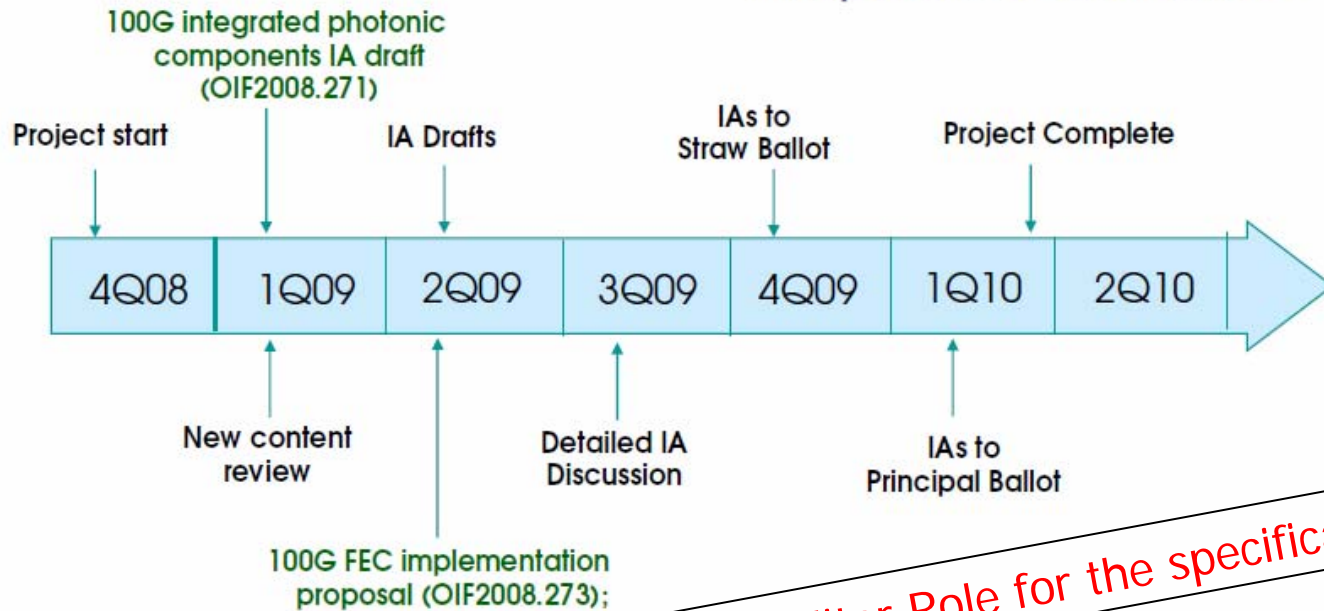
- Single fiber
 - Spectral efficiency not important
- Multi-vendor interconnect
 - Standards
 - Standards
 - Standards

- Serial rate
 - Spectral efficiency very important
- Proprietary interface
 - Modulation formats
 - Dispersion mitigation
 - PMD mitigation
 - FEC technology



"100G Long-Haul Transmission Module-Electromechanical" Specification Timeline

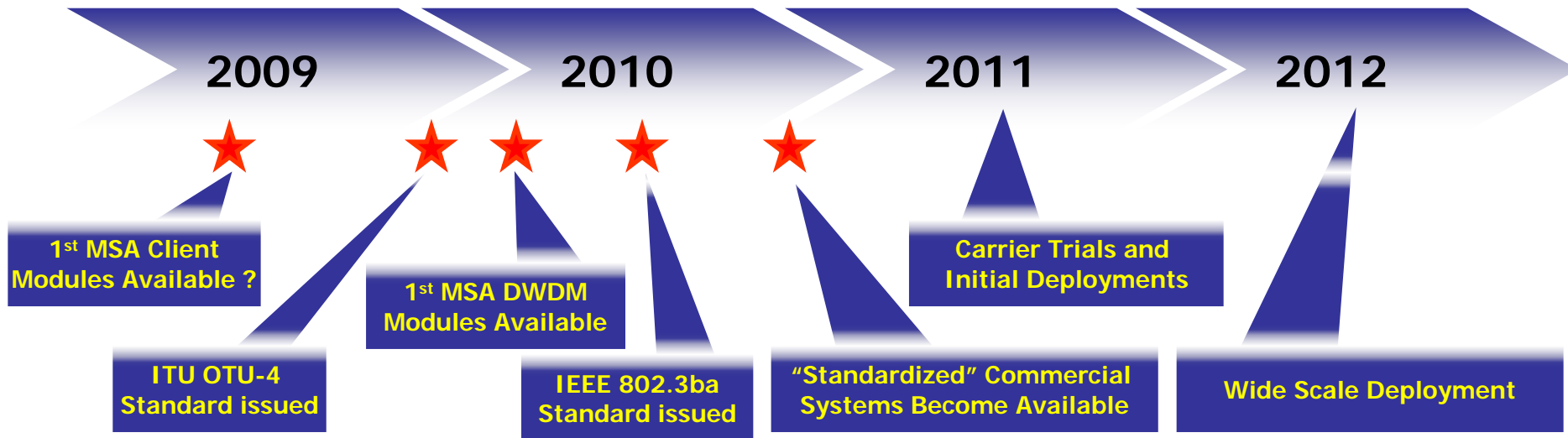
Proposed Timeline



Mintera has assumed responsibility of the Editor Role for the specification



Possible/Probable 100G Timelines



- 100 Gbps DWDM 'to do' list
 - Complete standards / industry collaboration process
 - IEEE, ITU, OIF
 - Ensure complementary functions (amplifiers, ROADMs etc.) will support modulation format and channel spacing
 - Build viable commercial supply chain
 - Deliver carrier-grade commercial solution

Conclusions

- Underlying traffic demand still strong
 - Good for all of us 😊
- Standardize where possible
 - Enable competition where beneficial
 - Utilize existing proven solutions (MSA's)
 - Consider future generations when defining this one
- When do we start talking about 400G ?

与作者联系 (Contact Author)

感谢您下载并阅读本演讲稿，针对本演讲内容如您希望与作者本人交流，可先联系：

中国光电产业高层论坛办公室
OFweek光电新闻网编辑部

林先生、于先生

电话:0755-83279360/61/63/65

传真:0755-83279008

Email:market@coeic.cn;editors@ofweek.com

地址:深圳市深南中路北方大厦705室

邮编:518033



www.mintera.com

Thank You